

Discharging Industrial Wastewater in King County

A clean water partnership



INDUSTRIAL WASTE PROGRAM

Clean Water – A Sound Investment

**Important facts about wastewater
discharge limits and permits**



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

Industrial Waste Program

The information in this publication is based on King County Code 28.84.060. Additional information and copies of these documents can be obtained by contacting:

King County Industrial Waste Program
130 Nickerson Street, Suite 200
Seattle, WA 98109-1658
206-263-3000
206-263-3001 (FAX)

This information is available on request in alternative formats for persons with disabilities by calling 206-263-3000 (voice) or 1-800-833-6388 (TTY).

Industrial Waste also has a website with detailed information of many kinds at: <http://dnr.metrokc.gov/wlr/indwaste/>.



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Industrial Wastewater in King County:

A Clean Water Connection

When your business properly disposes of wastewater, the Puget Sound region benefits from cleaner water and reduced wastewater treatment costs. This brochure will provide you with general guidelines for discharging industrial wastewater into the sanitary sewer system in the King County service area and parts of Snohomish County. Our goal is to help you conduct your business while you comply with the regulations.

King County Industrial Waste Program

The Industrial Waste Program administers the county's industrial waste regulations for local businesses that discharge industrial wastewater to King County's sewage treatment plants. Program activities include administration of waste discharge permits, inspections, enforcement, sample collection to determine compliance, and collection of surcharge and monitoring fees. Routine monitoring is conducted throughout the King County service area to trace discharges that could harm workers or disrupt treatment plant operations. Industrial Waste staff also work with businesses to help them identify and employ pollution prevention practices.

How the Wastewater System Works

What is industrial waste?

Industrial waste is a generic term for any waste material (solid, gas, or liquid) generated by a commercial, industrial, or nonresidential activity. The Industrial Waste Program focuses on companies that discharge wastewater during manufacturing, remediation, cleaning, or rinsing processes. This waste differs from residential household wastewater which includes *domestic sewage* from toilets, showers, washing machines, and other household-related activities.

What is hazardous waste?

Hazardous waste is a federal and state designation for waste material that is toxic, flammable, corrosive, or reactive; this kind of waste requires special handling and treatment at a licensed treatment, storage, disposal facility (TSDF). Hazardous waste can be discharged to the sewer system only with verbal or written authorization from the Industrial Waste Program. For information on how to manage and dispose of your hazardous waste, call the Business Waste Line at 206-296-3976.

How does wastewater get to the treatment plant?

The sewage system consists of a network of locally owned sewers that connect to large county lines. These large lines carry the wastewater to the regional treatment plants located in Seattle and Renton.

What is the difference between combined and separated sewers?

Separate from the sewage system, the storm drainage system is a small diameter, gravity flow drain line that transports stormwater to the nearest body of water *without* any treatment. Because of this, it is extremely important to keep contaminants out of storm drains.

Most of King County has separate storm and sewer drainage systems. In some portions of the City of Seattle, stormwater combines with sewage in a “combined sewage system” and is treated at the West Point treatment plant. All discharges to the combined system must meet King County discharge limits.

How is wastewater treated?

King County’s two major sewage treatment facilities in Seattle and in Renton are designed to treat domestic sewage and other waste through a process known as secondary treatment. The facilities send organic material through a series of skimmers, screens, and sedimentation tanks and then subject it to microbial breakdown. Microbial breakdown uses “bugs” to convert organic material to harmless by-products which settle and are removed from the wastewater. Heavy metals and some chemicals cannot break down and may be toxic to the biological process.

What is wastewater pretreatment?

Sewage treatment plants are designed to break down and treat biological wastes. Wastewater pollutants such as heavy metals and oils will not break down in the treatment plant; therefore, certain businesses need to treat their wastewater *before* discharging to the sewer. The pretreatment system, such as oil/water separation, chemical precipitation, or filtration, will depend on the type and concentration of pollutants in the wastewater. If your wastewater requires pretreatment, you are required to get an approval from the Industrial Waste Program before discharging or connecting to the sewer.

What are Biosolids?

Biosolids is the name for the solids produced by the wastewater treatment process. Biosolids, like the treatment plant effluent, must meet federal quality standards in order to be recycled in a beneficial manner. King County currently reuses its biosolids as a soil conditioner on wheat, barley, and forest lands throughout the state, including the Mountains-to-Sound Greenway Project along I-90. Locally composted biosolids are mixed with sawdust under the GroCo trade name and are available for landscape contractors and homeowners.

Guidelines for Businesses Discharging Industrial Waste

How does my business obtain approval to discharge?

Prior to discharging industrial waste to the sewer, all dischargers who generate and dispose of industrial wastewater (not including toilets) should contact the Industrial Waste Program. Potential dischargers will be sent a permit application package if a written discharge approval is necessary. You may also request that a permit application package be mailed to you by calling the Industrial Waste Program at 206-263-3000, or you can find the permit application and instructions on our website at <http://dnr.metrokc.gov/wlr/indwaste/forms.htm>.

How much advance notice must be given to discharge industrial wastewater?

The time it takes to obtain a permit depends upon the type and amount of wastewater a company discharges to the sewer. There are two types of standards and limitations (Federal Pretreatment Limits and King County Local Limits) that apply to a company's discharge. See page 6 for a list of federally regulated industries. Some approvals for very low-volume or one-time discharges can be made verbally or by letter.

For federally regulated discharges you must apply for a permit **90** days prior to discharge.

For King County regulated discharges that are:

- ◆ >25,000 gallons a day you must apply for a permit **60** days prior to discharge
- ◆ <25,000 gallons a day you must apply for a permit **30** days prior to discharge

What are the types of approvals?

The Industrial Waste Program issues several types of discharge approvals. These include permits, discharge authorizations, discharge letters, and verbal approvals. The type of approval is determined by the volume discharged, the nature of the business, the characteristics of the wastewater, and the potential risk to the treatment plant. A permit is required if you discharge more than 25,000 gallons per day or are a federally regulated industry.

What fees does the Industrial Waste Program charge?

There is a fee associated with the issuance and renewal of Waste Discharge Permits, Discharge Authorizations, and Letters of Authorization. This fee covers the costs of drafting and issuing the approval. These fees are over and above the base sewer fees charged by the local sewer agency or monitoring charges by King County. For more information, refer to the Industrial Waste Program's fees brochure or visit the fees page of our website at <http://dnr.metrokc.gov/wlr/indwaste/>. There is no charge for verbal approvals.

At least twice a year King County conducts routine monitoring of companies that have waste discharge permits. These companies are charged an additional fee depending on what pollutants are present in the wastewater and the volume of the discharge. This fee covers the costs associated with the management of the permit, sampling, and analysis of the wastewater. These charges are in addition to the base sewer rate charged by the local sewer agency and are billed monthly as part of your sewer bill.

What is the surcharge program?

The Surcharge Program charges industrial or commercial facilities that discharge wastewater having Total Suspended Solids (TSS) in excess of 400 milligrams per liter (mg/L) (equivalent to parts per million or ppm) or a Biological Oxygen Demand (BOD) greater than 300 mg/L. These facilities are charged an additional fee to pay for the costs of treating this high-strength wastewater. There are no limits for TSS or BOD unless you plan to discharge quantities that might adversely affect the sewage treatment facility, but these facilities are subject to all other discharge limits. The surcharge or high-strength fee is based on the volume of water discharged and the amount of TSS and BOD in the wastewater. King County monitors the waste strength on a regular basis. Industries that are typically subject to surcharge fees include:

<i>Bakeries</i>	<i>Food processing</i>
<i>Breweries and Wineries</i>	<i>Meat and Fish processing</i>
<i>Chemical toilet waste</i>	<i>Soft Drink bottlers</i>
<i>Commercial laundries</i>	<i>Tanker truck cleaning</i>
<i>Dairy products</i>	

For more information on fees, call 206-263-3000 and ask for the Industrial Waste brochure and a current fee schedule.

Discharge Limits

King County establishes local limits to ensure that industrial discharges do not damage the county’s treatment plants and the surrounding environment. In addition to local limits, some businesses are subject to federal pretreatment regulations which may be stricter than the local limits. If your business falls in the industrial categories listed on page 6 you are subject to these federal pretreatment regulations.

Federal Pretreatment Limits

The federal government has established discharge limits for specific activities. The following is a partial list of industries considered “categorical dischargers.” These companies require a full permit regardless of wastewater discharge volume.

<i>Aluminum forming</i>	<i>Metal foundries</i>
<i>Battery manufacturing</i>	<i>Nonferrous metal manufacturing</i>
<i>Coil coating</i>	<i>Pesticide manufacturing</i>
<i>Copper forming</i>	<i>Petroleum refining</i>
<i>Electrical/electronic components</i>	<i>Pharmaceutical manufacturing</i>
<i>Electroplating</i>	<i>Circuit board manufacturing</i>
<i>Porcelain enameling</i>	<i>Iron/steel manufacturing</i>
<i>Pulp/paper mills</i>	<i>Leather tanning finishing</i>
<i>Wood preserving</i>	<i>Metal finishing</i>
<i>Inorganic chemical manufacturing</i>	<i>Centralized waste treatment</i>

King County Local Limits

The following pollutants are subject to local limits. These limits apply to all businesses that discharge industrial wastewater to King County’s sewer system.

Metals and cyanide

Heavy metals in excess of the permitted limits can upset or disable treatment plant operations. Heavy metals either pass through the plant into the final effluent discharged to Puget Sound or accumulate in the biosolids.

<i>Parameter</i>	<i>Daily Average mg/L (ppm)</i>	<i>Instantaneous Maximum mg/L (ppm)</i>
<i>Arsenic</i>	1.0	4.0
<i>Cadmium</i>	0.5	0.6
<i>Chromium</i>	2.75	5.0
<i>Copper</i>	3.0	8.0
<i>Lead</i>	2.0	4.0
<i>Mercury</i>	0.1	0.2
<i>Nickel</i>	2.5	5.0
<i>Silver</i>	1.0	3.0
<i>Zinc</i>	5.0	10.0
<i>Cyanide</i>	2.0	3.0

The values listed as metal limits are for total metals, not just dissolved metals. If a company discharges less than 5,000 gallons per day the company only needs to comply with the instantaneous limits.

Fats, oils, and grease (FOG)

FOG from a petroleum or mineral origin (nonpolar FOG) can harm the biological treatment process. Oil/water separators used to pretreat oily wastewater must be approved before installation. Plans for separators should be submitted to the local sewer utility or to Industrial Waste for review and approval. Contact Industrial Waste to obtain a copy of the Oil/Water Separator Fact Sheet for information on plan submittal and installation guidelines, or find the fact sheet at <http://dnr.metrokc.gov/wlr/indwaste/oilfact.htm>. Nonpolar FOG is limited to 100 mg/L.

FOG from an animal or a vegetable origin (polar FOG) can block sewer lines. Although polar FOG has no numerical limit, dischargers are required to minimize free-floating polar FOG to prevent sewer line blockage. Dischargers may not add agents to emulsify free-floating polar FOG. Companies discharging polar FOG may be required to complete a FOG control plan for King County's review and approval.

Corrosive substances (pH)

Wastewater with a pH either above or below the permitted level can damage the sewer lines and disrupt treatment plant operations. It can also react with other substances in the sewage to create noxious fumes. The lower pH limit is a minimum of 5.0 with a median of 5.5. No single sample or reading may be less than 5.0. For other conditions related to sampling for low pH, contact King County Public Rule PUT 8-13 (PR) on the Internet at <http://www.metrokc.gov/recelec/archives/policies/put813pr.htm> or call 206-263-3000. The upper pH limit is 12.0. The upper limit may be exceeded only with a written or verbal authorization from King County.

Flammable or explosive materials

Sewer lines have been known to explode, causing severe damage to people and property as a result of explosive or flammable materials entering the sewer. To prevent this hazard, certain pollutants are prohibited from the sewer system. Prohibited pollutants include, but are not limited to: gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, and sulfides and any other substances that King County, the fire department, EPA, or Washington State recognizes as a hazard to the system. When discharging solutions containing any amounts of flammable or explosive substances, contact the Industrial Waste Program. The type of material, degree of hazard, and amount present will determine whether a discharge approval is granted.

Organic compounds

Organic compounds such as solvents, cleaners, thinners, pesticides, and laboratory chemicals may cause toxic gases and fumes in sewer lines. Discharges of pure organic products and discharges of compounds that may affect worker safety or health problems are prohibited.

Hydrogen sulfide

Hydrogen sulfide is dangerous to breathe and presents serious odor problems. It also reacts with water to form sulfuric acid which in turn destroys sewer lines. The atmospheric hydrogen sulfide limit is 10 ppm measured at a King County designated monitoring manhole. The soluble sulfide limits may be established on a case-by-case basis.

Solids and food waste

Solids capable of settling can restrict or block flow in sewer lines. The company discharging the solids is liable for any damages caused by sewage backups. Discharge of materials such as ashes, sand, grass, and gravel that can clog sewage flow is prohibited. All waste must contain less than 7 ml/L of solids capable of settling. All food waste, including food grinder waste, must be capable of passing through a 1/4-inch sieve.

High temperature

High temperature can cause the release of gases in sewers or disrupt treatment plant operation. The temperature of industrial wastewater shall not exceed 65°C (150°F) at the point where the wastewater enters the public sewer system.

Special Approvals

Groundwater remediation and construction dewatering discharges

Discharges from groundwater remediation sites with petroleum-contaminated soils are subject to the following limits:

<i>Parameter</i>	<i>mg/L (ppm)</i>	<i>Maximum Concentration g/L(ppb)</i>
<i>Benzene</i>	<i>0.13</i>	<i>130</i>
<i>Ethylbenzene</i>	<i>1.4</i>	<i>1,400</i>
<i>Toluene</i>	<i>1.5</i>	<i>1,500</i>

Discharges from groundwater remediation sites and construction dewatering projects are subject to King County local limits and volume restrictions. Discharges are limited to 25,000 gallons per day from November through April, unless special conditions are met.

Industrial waste sample collection

Prior to discharging industrial waste to the sewer system your business may need to have a representative sample of the wastewater analyzed and the results presented to King County Industrial Waste before obtaining discharge approval. Contact the Industrial Waste Program for guidance on approved sampling and analysis methods. King County does not conduct sampling for discharge approvals and characterization.

Industrial Waste Quarterly Publication

The Industrial Waste Program prepares a newsletter, the *Industrial Pretreatment Quarterly*. To get on the mailing list for a printed copy, call 206-263-3000 or visit our website at <http://dnr.metrokc.gov/wlr/indwaste/publicat.htm>. Each entire quarterly also is on the website.

A final word: The high price of polluting

Managing wastewater properly is good for the water, the environment, and community health. It's also good for business. Businesses or individuals who illegally discharge substances to the sanitary sewer system must pay for any damages and may be fined up to \$10,000 per day per violation. Companies may also be charged for increased monitoring and may be required to install upgraded equipment. Any business receiving a fine will have its company name published in a *Seattle Times* display ad entitled: "Companies Violate Pretreatment Standards." You can avoid these high costs of polluting and the Industrial Waste staff can help you by calling 206-263-3000.

Useful phone numbers

Spill Reporting

Hazardous Spills

Call 911

Spills to the sanitary sewer or combined sewer:

King County Industrial Waste 206-263-3000

Monday - Friday 8 a.m. to 5 p.m.

Weekend and after-hours:

West Point Treatment Plant 206-263-3801

South Treatment Plant 206-684-2404

Vashon Treatment Plant 206-463-7318

Spills to storm drains, rivers, lakes, or streams

Department of Ecology 425-649-7000

Spills to Lake Union, Ship Canal, or Puget Sound

U.S. Coast Guard 206-217-6232

Department of Ecology 425-649-7000

Seattle Harbor Patrol 206-684-4071

Hazardous Waste

Business Waste Line

206-296-3976

A service of the Local Hazardous Waste Management Program in King County. Offers technical assistance to businesses that generate small amounts of hazardous waste.

Department of Ecology

425-649-7000

Information, technical assistance, and enforcement regarding hazardous waste regulations.

Solid Waste and Recycling

Seattle/King County Health Department Waste Characterization Program

206-296-4633

Call for approval to dispose of industrial wastes, such as sludges, sandblast waste, and contaminated soils, in the garbage.

Solid Waste and Recycling (continued)

IMEX – Industrial Materials Exchange 206-296-4899

IMEX produces a free bimonthly catalog that lists wanted and surplus materials, including chemicals, solid waste, and by-products. Call to list materials or get on the mailing list.

Business & Industry Resource Venture 206-389-7304

A group for Seattle-area businesses interested in recycling.

**King County Solid Waste Greenworks
Business Recycling Program** 206-296-8800

For information on recycling.

Department of Ecology 1-800-RECYCLE

City of Seattle

Seattle Fire Department 206-233-7106

Hazardous Materials

Street Use Counter 206-684-5283

Call to find out if your exterior drains go to the sanitary sewer, combined sewer, or to a storm drain system.

**Seattle Public Utilities
(Drainage and Wastewater)** 206-684-7587

Ask to speak to a water quality investigator if you have questions on stormwater pollution prevention or you want to report an illegal discharge to the storm drain.

Local Water and Sewage Agencies

Call to make billing arrangements for discharges to the sanitary sewer systems. If you are unsure as to which district you are in, look on your water/sewer bill for the agency and phone number.

Alderwood 425-787-0220
Algona 253-833-2741
Auburn 253-931-3038
Bellevue 425-452-6973
Black Diamond 253-631-0351
Bothell 425-486-6250
Brier 425-775-5440
Bryn Mawr 206-772-1580
Cedar River 425-255-6370
Coal Creek 425-235-9200
Cross Valley 425-485-8461
Issaquah 425-837-3050
Kent 253-856-5201
Kirkland 425-828-1124
Lake Forest Park 206-368-5440
Mercer Island 425-236-3560
NE Sammamish 425-868-1144

Northshore 425-486-3278
Olympic View 425-774-7769
Pacific 253-929-1100
Redmond 425-556-2152
Renton 425-430-6852
Ronald 206-546-2494
Sammamish Plateau 425-392-6256
Seattle 206-684-3000
Shoreline 206-362-8100
Silver Lake 425-337-3647
Skyway 206-772-7343
Soos Creek 253-630-9900
Tukwila 206-433-1849
Val Vue 206-242-3236
Woodinville 425-483-9104
Woodway 206-542-4443

The mission of the Industrial Waste Program is to protect the environment, public health, biosolids quality, and King County's regional sewerage systems.

We work cooperatively with our customers as we regulate industrial discharges, provide technical assistance, and monitor the regional sewerage system.